

## XT Family of Contactors



## Contactors and Starters

## Product Description

The Eaton **XT** contactors and starters includes non-reversing and reversing contactors, overload relays and a variety of related accessories. Because **XT** meets IEC, UL®, CSA® and CE standards, it is the perfect product solution for IEC applications all over the world. The compact, space saving and easy to install **XT** line of IEC contactors and starters is the efficient and effective solution for customer applications from 7A to 2450A.

## Application Description

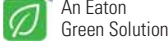
The **XT** line of IEC power control was engineered to provide highly effective control and protection for a variety of loads, including motors, compressors, pumps, resistive, capacitor banks, isolation, and others. **XT** also includes IEC ratings for lighting applications as well.

**XT** contactors can be used in safety applications according to EN 954-1, EN ISO 13849-1 and IEC 62061 up to Category 4, PL e and SIL 3. Information concerning safety related characteristics (B10 and B10d values) is available online. The auxiliary contact modules and built-in auxiliary contacts meet IEC EN 60947-5-1 Annex L (positively driven) and IEC EN 60947-4-1 Annex F (mirror contacts).

## Reference

Refer to **Volume 10—Enclosed Control**, CA08100012E, Tab 3, section 3.1 for additional product information on IEC Non-Metallic Enclosed Contactors and Starters.

## Contents

<b>Description</b>	<b>Page</b>
Relays and Timers . . . . .	V5-T1-3
Miniature Controls . . . . .	V5-T1-18
Contactors and Starters	
Product Identification . . . . .	V5-T1-36
Catalog Number Selection . . . . .	V5-T1-38
Product Selection . . . . .	V5-T1-39
Accessories . . . . .	V5-T1-65
Technical Data and Specifications . . . . .	V5-T1-78
Wiring Diagrams . . . . .	V5-T1-109
Dimensions . . . . .	V5-T1-114
 An Eaton Green Solution	
Thermal Overload Relays . . . . .	V5-T1-130
C440/ <b>XT</b> Electronic Overload Relay . . . . .	V5-T1-143
Manual Motor Protectors . . . . .	V5-T1-159
Combination Motor Controllers . . . . .	V5-T1-193
<b>XT</b> Electronic Manual Motor Protector . . . . .	V5-T1-219
EMS—Electronic Motor Starter . . . . .	V5-T1-232
<b>XT</b> DC Contactors . . . . .	V5-T1-234
Reference Data . . . . .	V5-T1-236

## Features and Benefits

- AC control from 12V to 600V 50/60 Hz
- DC control from 12V to 220V
- Available with screw or spring cage terminals
- Reversing or non-reversing contactors and starters
- AC-3 contactor ratings to 1000A and AC-1 contactor ratings to 2000A
- Non-reversing starters to 650A
- Panel or DIN rail mounting to 65A
- IP20 finger and back-of-hand proof
- Large ambient temperature range, -25 to 50°C [-13 to 122°F]
- AC and DC controlled contactors in the same compact frame
- Low power consumption AC and DC coils
- Built-in NO or NC auxiliary contacts to 32A
- Plug-in accessories for reduced installation time
- Coil replacement on Frames C–N (18–820A)
- Contact replacement on Frames D–N (40–820A)
- Integrated suppressor 7–150A DC operated contactors and 185–2000A AC and DC operated contactors

## Standards and Certifications

- IEC EN 60947
- CE approved
- UL
- CSA
- RoHS



**Note:** For Type 2 Coordination, see **Page V5-T1-237**.

## Product Identification

## XTCE007B to XTCE170G (7 to 170A) Contactors



## Notes

## ① Contactor up to 170A AC-3 (see Page V5-T1-39)

AC: 12–600V, 50, 60, 50/60 Hz  
 $0.8\text{--}1.1 \times U_c$

DC: 12–250V

XTCE...B\_ (7–15A):  $0.8\text{--}1.1 \times U_c$

XTCE...C\_–XTCE...G\_ (18–150A):  $0.7\text{--}1.2 \times U_c$

24V:  $0.7\text{--}1.3 \times U_c$  at 40°C without additional auxiliary contacts

Coils for special voltages

"Safe Isolation" to IEC 536 between coil and contacts

## ② Suppressors (see Page V5-T1-71)

RC suppressor

Varistor suppressor

Free-wheel diode suppressor

## ③ Overload Relays (see Page V5-T1-132)

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

## ④ Auxiliary Contact Modules (see Page V5-T1-24)

Two-pole, plug-in type

Four-pole, plug-in type

Overlapping contacts

Two-pole, side-mounting

## XTCE185–XTCE20 Contactors



## Notes

① **XTCE Contactors for 185–2000A**  
(see [Page V5-T1-46](#))

Multi-voltage coils:  
24–48 Vdc  
48–110 Vac/Vdc  
110–250 Vac/Vdc  
250–500 Vac  
0.7–1.15 × U<sub>c</sub>

Actuation options:

Directly  
From the PLC  
With low-consumption contact

**XTCS Contactors for 185–570A AC-3**  
(see [Page V5-T1-42](#))

Control voltages:  
110–120V 50/60 Hz  
220–240V 50/60 Hz  
Conventional operation

② **Cable Terminal Block**  
(see [Page V5-T1-97](#))

One or two conductors per phase  
Round and flat conductor connectable  
Finger-proof

③ **Flat Strip Conductor Terminals**  
(see [Page V5-T1-97](#))

One or two strips per phase  
Control circuit terminal  
Cover for fingerproofing

④ **Mechanical Interlock**  
(see [Page V5-T1-73](#))

Fits between contactors

⑤ **Overload Relays**  
(see [Page V5-T1-132](#))

Can be mounted directly  
Separate mounting, possible  
Protection of EEx e-motors  
PTB certificate

⑥ **Terminal Shroud**  
(see [Page V5-T1-75](#))

Finger-proof

⑦ **Auxiliary Contact Modules**  
(see [Page V5-T1-24](#))

Two-pole, side-mounting

### Catalog Number Selection

#### XT IEC Contactors and Starters



Frame F



### Three-Pole Contactors, Frame F—UL/CSA Ratings

UL General Purpose Ampere Rating	Single-Phase hp Ratings			Three-Phase hp Ratings				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
	115V	200V	230V	200V	230V	460V	575V		
125	7-1/2	15	15	25	30	60	75	—	XTCE080F00_
125	7-1/2	15	15	25	30	60	75	1NO-1NC	XTCE080FS1_
125	7-1/2	15	15	25	40	75	100	—	XTCE095F00_
125	7-1/2	15	15	25	40	75	100	1NO-1NC	XTCE095FS1_

### Three-Pole Contactors, Frame F—IEC Ratings

AC-3 I <sub>e</sub> (A)	AC-1 (40°C) I <sub>e</sub> = I <sub>th</sub> (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
		220/230V	380/400V	415V	660/690V		
80	110	25	37	48	63	—	XTCE080F00_
80	110	25	37	48	63	1NO-1NC	XTCE080FS1_
95	130	30	45	57	75	—	XTCE095F00_
95	130	30	45	57	75	1NO-1NC	XTCE095FS1_

Frame G



### Three-Pole Contactors, Frame G—UL/CSA Ratings

UL General Purpose Ampere Rating	Single-Phase hp Ratings			Three-Phase hp Ratings				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
	115V	200V	230V	200V	230V	460V	575V		
160	10	25	25	40	50	100	100	—	XTCE115G00_
160	10	25	25	40	50	100	100	1NO-1NC	XTCE115GS1_
180	10	25	30	40	60	125	125	—	XTCE150G00_
180	10	25	30	40	60	125	125	1NO-1NC	XTCE150GS1_
180	10	25	30	40	60	125	125	—	XTCE170G00_
180	10	25	30	40	60	125	125	1NO-1NC	XTCE170GS1_

### Three-Pole Contactors, Frame G—IEC Ratings

AC-3 I <sub>e</sub> (A)	AC-1 (40°C) I <sub>e</sub> = I <sub>th</sub> (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
		220/230V	380/400V	415V	660/690V		
115	160	37	55	70	90	—	XTCE115G00_
115	160	37	55	70	90	1NO-1NC	XTCE115GS1_
150	190	48	75	91	96	—	XTCE150G00_
150	190	48	75	91	96	1NO-1NC	XTCE150GS1_
170	225	52	90	100	96	—	XTCE170G00_
170	225	52	90	100	96	1NO-1NC	XTCE170GS1_

#### Notes

The 40–65A XTCE contactors have positively driven contacts within the auxiliary contact module.  
Six auxiliary contacts are possible with a combination of side-mounted and front-mount auxiliary contacts.

DC operated contactors (Frames B–G, 7–150A) have a built-in suppressor circuit.

① Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-53**.

② For spring cage terminals, insert **C** after the fourth digit of the catalog number. Example: XTCEC007B10A.

For 7–12A XTCEC contactors, the power, auxiliary and coil terminals are spring cage.

For 18–32A XTCEC contactors, the auxiliary and coil terminals are spring cage.

For 40–150A XTCEC contactors, the coil terminals only are spring cage.

Starter Application Data <sup>①</sup>

Catalog Prefix	AC-3	Electrical Life (Operations)
XTAE012B	12A	1 million
XTAE015B	15A	1.2 million
XTAE018C	18A	2 million

## Magnet Coil Suffix

Coil Voltage	Suffix Code
<b>Frames A–B</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
120 Vdc	<b>AD</b>
220 Vdc	<b>BD</b>
12 Vdc	<b>RD</b>
48 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames C–F</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frame G</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
42–48V 50/60 Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>
<b>Frame H</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
24V 50/60Hz	<b>T</b>
42–48V 50/60Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
24–27 Vdc	<b>TD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames L–N</b>	
110–250 Vdc 40–60 Hz	<b>A</b>
250–500V 40–60 Hz	<b>C</b>
48–110 Vdc 40–60 Hz	<b>Y</b>
24–48 Vdc	<b>TD</b> <sup>②</sup>
<b>Frames L–M, S-Series</b>	
110–120V 50/60 Hz	<b>A</b>
220–240V 50/60 Hz	<b>B</b>
<b>Frames P–R</b>	
230–250 Vdc 50–60 Hz	<b>B</b>

## Notes

<sup>①</sup> See **Page V5-T1-111** for electrical life curves.

<sup>②</sup> Frames L–M only.

## XT Family of Contactors



## Contactors and Starters

## Product Description

The Eaton **XT** contactors and starters includes non-reversing and reversing contactors, overload relays and a variety of related accessories. Because **XT** meets IEC, UL®, CSA® and CE standards, it is the perfect product solution for IEC applications all over the world. The compact, space saving and easy to install **XT** line of IEC contactors and starters is the efficient and effective solution for customer applications from 7A to 2450A.

## Application Description

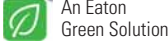
The **XT** line of IEC power control was engineered to provide highly effective control and protection for a variety of loads, including motors, compressors, pumps, resistive, capacitor banks, isolation, and others. **XT** also includes IEC ratings for lighting applications as well.

**XT** contactors can be used in safety applications according to EN 954-1, EN ISO 13849-1 and IEC 62061 up to Category 4, PL e and SIL 3. Information concerning safety related characteristics (B10 and B10d values) is available online. The auxiliary contact modules and built-in auxiliary contacts meet IEC EN 60947-5-1 Annex L (positively driven) and IEC EN 60947-4-1 Annex F (mirror contacts).

## Reference

Refer to **Volume 10—Enclosed Control**, CA08100012E, Tab 3, section 3.1 for additional product information on IEC Non-Metallic Enclosed Contactors and Starters.

## Contents

<i>Description</i>	<i>Page</i>
Relays and Timers . . . . .	V5-T1-3
Miniature Controls . . . . .	V5-T1-18
Contactors and Starters	
Product Identification . . . . .	V5-T1-36
Catalog Number Selection . . . . .	V5-T1-38
Product Selection . . . . .	V5-T1-39
Accessories . . . . .	V5-T1-65
Technical Data and Specifications . . . . .	V5-T1-78
Wiring Diagrams . . . . .	V5-T1-109
Dimensions . . . . .	V5-T1-114
	
Thermal Overload Relays . . . . .	V5-T1-130
C440/ <b>XT</b> Electronic Overload Relay . . . . .	V5-T1-143
Manual Motor Protectors . . . . .	V5-T1-159
Combination Motor Controllers . . . . .	V5-T1-193
<b>XT</b> Electronic Manual Motor Protector . . . . .	V5-T1-219
EMS—Electronic Motor Starter . . . . .	V5-T1-232
<b>XT</b> DC Contactors . . . . .	V5-T1-234
Reference Data . . . . .	V5-T1-236

## Features and Benefits

- AC control from 12V to 600V 50/60 Hz
- DC control from 12V to 220V
- Available with screw or spring cage terminals
- Reversing or non-reversing contactors and starters
- AC-3 contactor ratings to 1000A and AC-1 contactor ratings to 2000A
- Non-reversing starters to 650A
- Panel or DIN rail mounting to 65A
- IP20 finger and back-of-hand proof
- Large ambient temperature range, -25 to 50°C [-13 to 122°F]
- AC and DC controlled contactors in the same compact frame
- Low power consumption AC and DC coils
- Built-in NO or NC auxiliary contacts to 32A
- Plug-in accessories for reduced installation time
- Coil replacement on Frames C–N (18–820A)
- Contact replacement on Frames D–N (40–820A)
- Integrated suppressor 7–150A DC operated contactors and 185–2000A AC and DC operated contactors

## Standards and Certifications

- IEC EN 60947
- CE approved
- UL
- CSA
- RoHS



**Note:** For Type 2 Coordination, see **Page V5-T1-237**.

## Product Identification

## XTCE007B to XTCE170G (7 to 170A) Contactors



## Notes

## ① Contactor up to 170A AC-3 (see Page V5-T1-39)

AC: 12–600V, 50, 60, 50/60 Hz  
 $0.8\text{--}1.1 \times U_c$

DC: 12–250V

XTCE...B\_ (7–15A):  $0.8\text{--}1.1 \times U_c$

XTCE...C\_–XTCE...G\_ (18–150A):  $0.7\text{--}1.2 \times U_c$

24V:  $0.7\text{--}1.3 \times U_c$  at 40°C without additional auxiliary contacts

Coils for special voltages

"Safe Isolation" to IEC 536 between coil and contacts

## ② Suppressors (see Page V5-T1-71)

RC suppressor

Varistor suppressor

Free-wheel diode suppressor

## ③ Overload Relays (see Page V5-T1-132)

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

## ④ Auxiliary Contact Modules (see Page V5-T1-24)

Two-pole, plug-in type

Four-pole, plug-in type

Overlapping contacts

Two-pole, side-mounting



## XTCE185–XTCE20 Contactors



## Notes

① **XTCE Contactors for 185–2000A**  
(see Page V5-T1-46)

Multi-voltage coils:  
24–48 Vdc  
48–110 Vac/Vdc  
110–250 Vac/Vdc  
250–500 Vac  
0.7–1.15 x  $U_c$

Actuation options:  
Directly  
From the PLC

**XTCS Contactors for 185–570A AC-3**  
(see Page V5-T1-42)

Control voltages:  
110–120V 50/60 Hz  
220–240V 50/60 Hz  
Conventional operation

② **Cable Terminal Block**  
(see Page V5-T1-97)

One or two conductors per phase  
Round and flat conductor connectable  
Finger-proof

③ **Flat Strip Conductor Terminals**  
(see Page V5-T1-97)

One or two strips per phase  
Control circuit terminal  
Cover for fingerproofing

④ **Mechanical Interlock**  
(see Page V5-T1-73)

Fits between contactors

⑤ **Overload Relays**  
(see Page V5-T1-132)

Can be mounted directly  
Separate mounting, possible  
Protection of EEx e-motors  
PTB certificate

⑥ **Terminal Shroud**  
(see Page V5-T1-75)

Finger-proof

⑦ **Auxiliary Contact Modules**  
(see Page V5-T1-24)

Two-pole, side-mounting

### Catalog Number Selection

#### XT IEC Contactors and Starters



Frame F



### Three-Pole Contactors, Frame F—UL/CSA Ratings

UL General Purpose Ampere Rating	Single-Phase hp Ratings			Three-Phase hp Ratings				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
	115V	200V	230V	200V	230V	460V	575V		
125	7-1/2	15	15	25	30	60	75	—	XTCE080F00_
125	7-1/2	15	15	25	30	60	75	1NO-1NC	XTCE080FS1_
125	7-1/2	15	15	25	40	75	100	—	XTCE095F00_
125	7-1/2	15	15	25	40	75	100	1NO-1NC	XTCE095FS1_

### Three-Pole Contactors, Frame F—IEC Ratings

AC-3 I <sub>e</sub> (A)	AC-1 (40°C) I <sub>e</sub> = I <sub>th</sub> (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
		220/230V	380/400V	415V	660/690V		
80	110	25	37	48	63	—	XTCE080F00_
80	110	25	37	48	63	1NO-1NC	XTCE080FS1_
95	130	30	45	57	75	—	XTCE095F00_
95	130	30	45	57	75	1NO-1NC	XTCE095FS1_

Frame G



### Three-Pole Contactors, Frame G—UL/CSA Ratings

UL General Purpose Ampere Rating	Single-Phase hp Ratings			Three-Phase hp Ratings				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
	115V	200V	230V	200V	230V	460V	575V		
160	10	25	25	40	50	100	100	—	XTCE115G00_
160	10	25	25	40	50	100	100	1NO-1NC	XTCE115GS1_
180	10	25	30	40	60	125	125	—	XTCE150G00_
180	10	25	30	40	60	125	125	1NO-1NC	XTCE150GS1_
180	10	25	30	40	60	125	125	—	XTCE170G00_
180	10	25	30	40	60	125	125	1NO-1NC	XTCE170GS1_

### Three-Pole Contactors, Frame G—IEC Ratings

AC-3 I <sub>e</sub> (A)	AC-1 (40°C) I <sub>e</sub> = I <sub>th</sub> (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
		220/230V	380/400V	415V	660/690V		
115	160	37	55	70	90	—	XTCE115G00_
115	160	37	55	70	90	1NO-1NC	XTCE115GS1_
150	190	48	75	91	96	—	XTCE150G00_
150	190	48	75	91	96	1NO-1NC	XTCE150GS1_
170	225	52	90	100	96	—	XTCE170G00_
170	225	52	90	100	96	1NO-1NC	XTCE170GS1_

#### Notes

The 40–65A XTCE contactors have positively driven contacts within the auxiliary contact module.  
Six auxiliary contacts are possible with a combination of side-mounted and front-mount auxiliary contacts.

DC operated contactors (Frames B–G, 7–150A) have a built-in suppressor circuit.

① Underscore (\_) indicates magnet coil suffix required. See **Page V5-T1-53**.

② For spring cage terminals, insert **C** after the fourth digit of the catalog number. Example: XTCEC007B10A.

For 7–12A XTCEC contactors, the power, auxiliary and coil terminals are spring cage.

For 18–32A XTCEC contactors, the auxiliary and coil terminals are spring cage.

For 40–150A XTCEC contactors, the coil terminals only are spring cage.

Starter Application Data <sup>①</sup>

Catalog Prefix	AC-3	Electrical Life (Operations)
XTAE012B	12A	1 million
XTAE015B	15A	1.2 million
XTAE018C	18A	2 million

## Magnet Coil Suffix

Coil Voltage	Suffix Code
<b>Frames A–B</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
120 Vdc	<b>AD</b>
220 Vdc	<b>BD</b>
12 Vdc	<b>RD</b>
48 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames C–F</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frame G</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
42–48V 50/60 Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>
<b>Frame H</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
24V 50/60Hz	<b>T</b>
42–48V 50/60Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
24–27 Vdc	<b>TD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames L–N</b>	
110–250 Vdc 40–60 Hz	<b>A</b>
250–500V 40–60 Hz	<b>C</b>
48–110 Vdc 40–60 Hz	<b>Y</b>
24–48 Vdc	<b>TD</b> <sup>②</sup>
<b>Frames L–M, S-Series</b>	
110–120V 50/60 Hz	<b>A</b>
220–240V 50/60 Hz	<b>B</b>
<b>Frames P–R</b>	
230–250 Vdc 50–60 Hz	<b>B</b>

## Notes

<sup>①</sup> See **Page V5-T1-111** for electrical life curves.

<sup>②</sup> Frames L–M only.